

What is Claimed is:

1. A portable Voice Over Internet Protocol (VoIP) test device for testing a VoIP network, comprising:
 - a user interface;
 - a transceiver configured to communicate with the VoIP network;
 - a memory storing a test algorithm; and
 - a processor in communication with said user interface, said transceiver, and said memory and configured to execute said test algorithm to cause said transceiver to communicate with the VoIP network to test the VoIP network.
2. The VoIP test device of claim 1, further comprising a digital signal processor.
3. The VoIP test device of claim 2, wherein said digital signal processor comprises at least one coder/decoder.
4. The VoIP test device of claim 3, wherein said coder/decoder uses at least one of the following compression protocols: G.711a-law, G711 μ -law, G.720, G.723.1, G.726, G.728, G.729, G.729A, and G.729AB2.
5. The VoIP test device of claim 1, wherein said transceiver comprises a power line modem for communication with a power line communication network.
6. The VoIP test device of claim 1, wherein the transceiver comprises an Ethernet transceiver.
7. The VoIP test device of claim 1, wherein said transceiver comprises a cable modem.
8. The VoIP test device of claim 1, wherein said user interface device comprises an audio input device and an audio output device.
9. The VoIP test device of claim 1, wherein said transceiver comprises a digital subscriber line (DSL) modem.
10. The VoIP test device of claim 1, wherein said user interface comprises a manual input device and a display.
11. The VoIP test device of claim 1, further comprising a media access controller.
12. The VoIP test device of claim 10, further comprising a dual tone multi-frequency encoder in communication with said manual input device.
13. The VoIP test device of claim 1, further comprising a communication interface port.
14. The VoIP test device of claim 13, wherein said communication interface port comprises a RJ-11 connector.

15. The VoIP test device of claim 13, wherein said communication interface port comprises a tip/ring interface.

16. The VoIP test device of claim 1, further comprising a Power over Ethernet module.

17. The VoIP test device of claim 5, further comprising a media access controller.

18. The VoIP test device of claim 1, wherein the digital signal processor uses at least one of the following data compression techniques: G.711a-law, G711 μ -law, G.720, G.723.1, G.726, G.728, G.729, G.729A, and G.729AB2.

19. The VoIP test device of claim 5, wherein the device receives power from a power line communication network.

20. The VoIP test device of claim 1, further comprising a network status indicator.

21. The VoIP test device of claim 20, wherein said network status indicator provides a mean opinion score (MOS) output.

22. The VoIP test device of claim 1, further comprising a handset and a base.

23. The VoIP test device of claim 1, wherein said processor is programmed to test the VoIP network based on at least one of the following: E-Model, Perceptual Analysis Measurement System, Perceptual Evaluation of Speech Quality, Perceptual Speech Quality Measurement (PSQM), and PSQM+.

24. The VoIP test device of claim 1, wherein said memory includes an Internet Protocol (IP) address stored therein.

25. The VoIP test device of claim 1, wherein said memory includes an algorithm for requesting an IP address.

26. The VoIP test device of claim 1, wherein said memory includes a MAC address stored therein.

27. The VoIP test device of claim 1, wherein said memory includes a MAC address stored therein.

28. A method of using a portable test device to test a VoIP network, comprising:
transmitting test signals over the VoIP network;
receiving response signals in response to transmitting said test signals;
processing said response signals to determine the quality of the VoIP network;
and
presenting an indication of the quality of the VoIP network to the user.

29. The method of claim 28, wherein the processing comprises at least one of time-frequency mapping, frequency warping, intensity warping, loudness scaling, asymmetric masking, and cognitive modeling.

30. The method of claim 28, wherein said indication comprises indicating at least one of the following: incorrect Internet Protocol configuration, incorrect gateway address designation, signal echo, and call drop out.

31. The method of claim 28, further comprising determining whether the VoIP network is operable to communicate voice data according to predetermined voice communication parameters.

32. The method of claim 28, further wherein said processing comprises determining signal distortion.

33. The method of claim 28, further wherein said processing comprises determining signal delay.

34. The method of claim 28, further wherein said processing comprises determining packet jitter.

35. The method of claim 28, wherein said indication comprises a MOS indication.

36. A portable communication device for communicating over a power line communication (PLC) VoIP network, comprising:

a user interface comprising a manual input device, an audio input device, and an audio output device;

a digital signal processor in communication with said processor and for receiving an input from said user interface;

a transceiver in communication with said digital signal processor and configured to be communicatively coupled to the PLC VoIP network; and

wherein said digital signal processor is configured to convert a first analog signal from said audio input device to a first digital data and said transceiver is configured to transmit said digital data via the PLC VoIP network; and

wherein said transceiver is configured to receive second digital data from the PLC VoIP network and said digital signal processor is configured to convert a second digital data to a second analog signal for production by said audio output device.

37. The device of claim 36, further comprising:

a processor communicatively coupled to said transceiver; and

a memory in communication with said processor.

38. The device of claim 36, wherein said digital signal processor comprises a codec.

39. The device of claim 36, wherein the digital signal processor uses at least one of the following data compression techniques: G.711a-law, G.711 μ -law, G.720, G.723.1, G.726, G.728, G.729, G.729A, and G.729AB2.
40. The device of claim 36, further comprising a display.
41. The device of claim 36, wherein said user interface comprises a DTMF encoder in communication with said manual input device.
42. The device of claim 36, further comprising a RJ-11 interface in communication with said digital signal processor.
43. The device of claim 36, further comprising a media access controller.
44. The device of claim 36, wherein said transceiver is a power line modem.
45. The device of claim 44, further comprising a media access controller.
46. The device of claim 45, wherein said media access controller forms part of said power line modem.
47. The device of claim 37, wherein information relating to a plurality of tests is stored in said memory.
48. The device of claim 47, wherein said information comprises an algorithm.
49. A method of testing a VoIP network, comprising:
receiving an input from a user interface;
executing a test algorithm;
transmitting a first test signal over the VoIP network;
receiving a second signal from the VoIP network; and
processing said second signal.
50. A portable communication device for communicating over a power line communication (PLC) VoIP network, comprising:
a user interface comprising a manual input device, an audio input device, and an audio output device;
a voice gateway in communication with said user interface; and
a power line modem in communication with said voice gateway and configured to be communicatively coupled to the PLC VoIP network.
51. The device of claim 50, wherein said power line mode comprises a media access controller.
52. The device of claim 50, wherein said power line modem comprises a wall socket plug.

53. A portable communication device for communicating over a power line communication (PLC) VoIP network, comprising:

an enclosure;

a voice gateway disposed in said enclosure; and

a power line modem disposed in said enclosure and in communication with said voice gateway and configured to be communicatively coupled to the PLC VoIP network.

54. The device of claim 53, wherein said power line mode comprises a media access controller.

55. The device of claim 53, wherein said power line modem comprises a wall socket plug.